Royal College – Colombo 07
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Grade 09 – First Term Test – March 2020
පළමු වාර පරීක්ෂණය - 2020 මාර්තු - 09 ශ්‍රේණිය

කාලය : පැය 02 යි
Time : 02 hours

Maths
ගණිතය

Name : - …………………………..   Class :- ………….   Index no :- …………………

Part I

- Answer all the questions on this paper itself. Each question carries 02 marks.

(01)   If the price of a petrol litre is Rs 300, find the price of 500 mililitres of petrol.

(02)   Find the value of $3.01 + 4.7$.

(03)   How much is $\frac{3}{5}$ of Rs. 800?

(04)   Show that 0 is a term of the number pattern with general term 48-3n.

(05)   Verify that $(x - 2)(x + 5) = x^2 + 3x - 10$ when $x = 3$.

(06)   Expand the expressions.
$-2(x + 3)$

(07)   Construct algebraic expression for the following situation in terms of x.
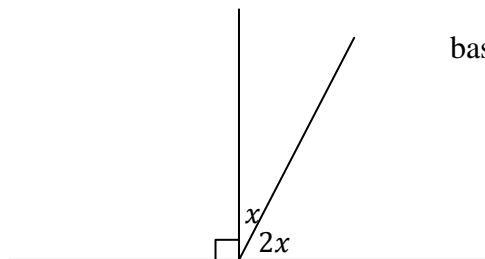Subtract three from four times of x.

(08)   Find the common difference of the sequence 90, 80, 70, ... -

(09)   Express 0.84 as a percentage.

(10)   How many grammes is $\frac{2}{5}$ of 1kg?

(11)   Write the reciprocal of $2\frac{3}{7}$.

(12)

based on the given figure, find the value x.

(13) Write down the supplement of $40°$.

(14) The area of the base of a cuboid shaped container is $10cm^2$. If 200ml of water is poured into this container, find the height of the water level.
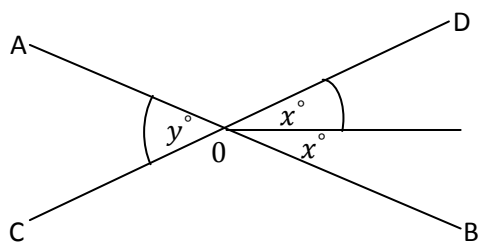
(15) Expand and simplify the expression

$2a(a+3)-(3a-5)$

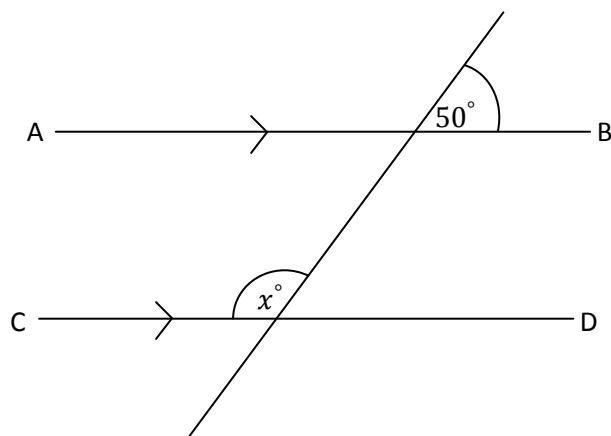(16) Factorize the algebraic expression.

$a^2 - 2a + ab - 2b$

(17) Write down $2m^3$ in litres.

(18) AB and CD intersect each other at 0. Find the value of x if $y = 110°$.

(19) Solve the equation $3x = 18$ by using the axioms.

(20)

If AB//CD, find the value of x.

Part II

- Answer the first question and another 04 questions only.
- First question carries 16 marks and other questions carry 11 marks each.

(01) (a) A vendor bought an incomplete newly built almirah for Rs. 25000/= and completed it fully after spending another Rs. 5000. He then sold it for Rs. 40000.a

  i)   Find the total cost incurred by the vendor for the almirah.

  ii) Write explanations for profit and loss.

  iii) Determine whether the vendor earns a profit or incurs a loss by selling the almirah.

  iv) Find the profit earned or loss incurred by the vendor.

  v)   Calculate the profit / loss percentage.   (Marks $2 \times 5 = 10$)

  (b) Factorize the quadratic expression given below.

  i) $x^2 - x - 12$

  ii) $x^2 - 8x + 15$ (marks $3 \times 2 = 6$)

(02) i)   A discount of 4% is offered for outright payment for a wrist watch worth Rs. 2000.

  (a) How much is offered as the discount for the wrist watch?   (03 marks)

  (b) Find the value of the wrist watch when the discount is given   (03 marks)

  ii) A land worth Rs. 600 000 was sold taking the support of a broker. The broker charges a commission of 3% on the sale of a land.

  (a) Find the commission paid for the broker.   (03 marks)

  (b) How much does the land owner receive after paying the commission? (03 marks)

(03)   i)   Simplify,

(a) $\frac{2}{5} + \frac{3}{5} \times \frac{1}{4}$ (03 marks)

(b) How much is $\frac{2}{3}$ of a minute in seconds? (02 marks)

ii)   Betel leaves have been cultivated in $\frac{1}{3}$ of a land and Banana in ½ of the remaining land.
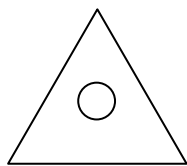
(a) How much is the remaining land after cultivating the betel leaves?

(b) Express the area of a land used to cultivate banana as fraction of the whole land.
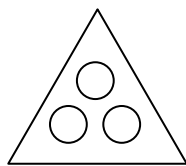
(c) Express the area of the remaining land as a fraction of the whole land after cultivating banana and betel leaf cultivation. (06 marks)
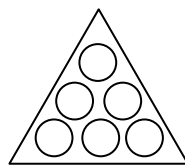
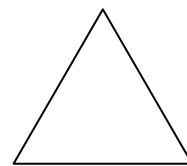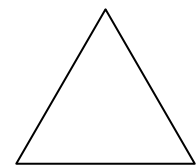(04)   i)   Study the following pattern and complete the table.

| (i) | (ii) | (iii) | (iv) | (v) |

No of the pattern	(i)	(ii)	(iii)	(iv)	(v)
No of total dots	1	3	6	_____	_____

(04 marks)

ii)   The general term of a number pattern is $2n + 1$.

(a) Write the first three terms of this number pattern. (03 marks)
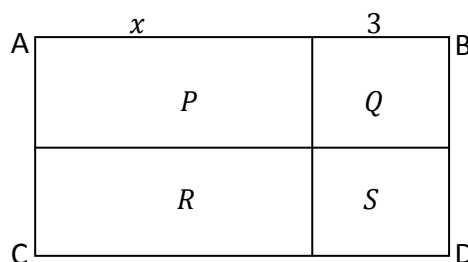
(b) Which term is equal to 25? (02 marks)

(c) Show that 50 is not a term of this number pattern (02 marks)

(05)   i)   Expand and simplify the product of binomial expression $(x + 3)(x + 4)$. (03 marks)

ii)   The area of the following rectangle is given by $(x + 3)(x + 4)$.

(a) Find the areas of sections P, Q, R and S separately.

(b) By using the areas of sections P, Q, R and S, Obtain an expression for $(x + 3)(x + 4)$ and simplify it.

    (c) Write down the relationship in between the area of ABCD and the answer of (b).

<div align="right">(06 marks)</div>

iii) Find the value of the expression $(3a - 2b)$ when $a = 2, b = \frac{1}{2}$.   (02 marks)

(06)   i) Express 410_{ten} as a binary number.   (02 marks)

       ii) Convert the binary number 111010_{two} into base ten.   (03 marks)
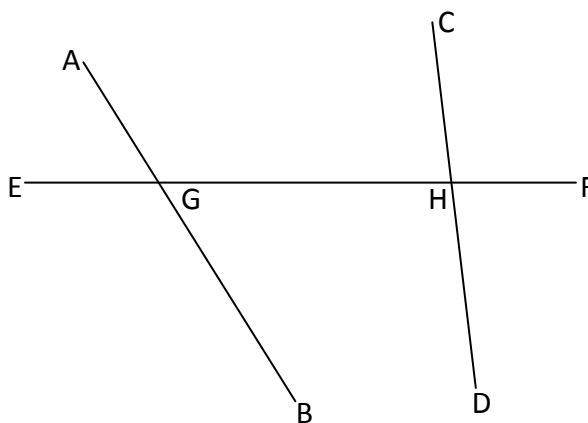
       iii) Simplify.

           $10011_{two} + 11011_{two} + 11_{two}$ (03 marks)

       iv) Simplify $11001_{two} - 1100_{two} - 1111_{two}$ (03 marks)

(07)

AB, CD and EF are three straight lines.

i)   Name a straight line that can be taken as a transversal.   (02 marks)

ii) What are the two straight lines which are intersected by the transversal?   (02 marks)

iii) Write down an a alternate angle for $A\hat{G}H$.

     Write down a corresponding angle for $A\hat{G}H$.

     Write down an allied angle for $A\hat{G}H$.   (03 marks)

iv) Draw the figure in the answer sheet when AB and CD are parallel.   (02 marks)

v) Write down the relationship of pair of allied angles when AB and CD are parallel.